



# **Crown Corporation**

## **B U S I N E S S   P L A N S**

### FOR THE FISCAL YEAR 2010–2011

#### Halifax-Dartmouth Bridge Commission *Business Plan 2010–2011*

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## Message from the Minister and the Chair

It is with pleasure that we submit the business plan for the Halifax-Dartmouth Bridge Commission (operating as Halifax Harbour Bridges, or HHB) for 2010–2011.

The Angus L. Macdonald and A Murray MacKay bridges are key transportation links in the province. They represent two of only six entrances to the peninsula of Halifax, and in 2009 there were more than 33 million crossings, compared with 32.4 million crossings in 2008. In other words, they play a critical economic and social role in the progress of this region.

There was a time when seeing growth in traffic numbers was a reason to celebrate because it represented growth in the region. However, it also represents growing congestion, and growing congestion is a cause for concern. As a community, we cannot afford, economically or environmentally, to build our way clear of congestion, and HHB is looking at ways it can play a role. During 2010 we will see the results of a study researching how tolling methods such as peak-period tolling and one-way tolling might affect congestion, and we will continue to encourage people to walk or cycle across the Macdonald Bridge.

Because of the critical role the bridges play, HHB makes significant investments in ensuring the bridges remain two of the best maintained pieces of infrastructure in the province. In the last fiscal year, the approach spans on the Macdonald bridge were resurfaced, ramp 9 (also known as the K-ramp) on the Halifax side of the MacKay Bridge was removed, six variable-message signs were installed, a state-of-the art security system project began, and the refurbishment of the Victoria Road interchange was completed. The total capital requirement for 2009–2010 was \$11.9 million. The capital requirement for 2010–2011 is \$16.6 million;

that includes projects such as resurfacing the spans of the MacKay Bridge, including replacing deck and expansion joints at the main towers, and continuing the security project. A load analysis of the Macdonald Bridge will also be done in preparation for the redecking of the bridge sometime between 2014 and 2016. This project is expected to cost between \$135 million and \$150 million.

This extensive workplan is able to proceed because of the strong financial management of the organization and because the revenue generated from the tolls stays at HHB. This, despite the fact there has not been a toll increase since 1992.

The bridges are vital transportation links and determining factors in the economic development of HRM and the region. We look forward to introducing new strategies that will ensure HHB's ability to keep traffic moving efficiently and safely over the Halifax Harbour.

The Honourable Graham Steele  
Minister of Finance

Tom Calkin, P.Eng., CMC  
Chair, Halifax Harbour Bridges

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## Mission

***To provide safe, efficient, and reliable passage at an appropriate cost.***

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## Mandate

The Halifax-Dartmouth Bridge Commission (operating as Halifax Harbour Bridges, or HHB) is the self-supporting entity that operates two toll bridges, the Angus L. Macdonald Bridge and the A. Murray MacKay Bridge. It was created in 1950 by a statute of the Province of Nova Scotia and now operates under a statute passed in 2005. In accordance with Section 27 of the Halifax-Dartmouth Bridge Commission Act:

27 (1) With the approval of the Governor in Council, the Commission may construct, maintain and operate a transportation project across Halifax Harbour and the North West Arm, or either of them.

(2) Where the Government of the Province or the Municipality requests the Commission to investigate the sufficiency of the means of access to Halifax provided by the Bridges or the present or future need of a transportation project referred to in subsection (1), the Commission may

(a) conduct such investigation and studies as it considers advisable respecting

(i) the need or advisability of a transportation project referred to in subsection (1),

(ii) the proper location of any such transportation project,

(iii) the manner or method of financing and operating any such transportation project,

(iv) the probable cost of acquiring lands for the purposes of an additional transportation project and the cost of constructing such transportation project,

(v) any other matter related to the construction, operation or financing of a transportation project referred to in subsection (1) that the Commission considers relevant;

(b) for the purpose of making investigation and studies, engage expert or technical assistance;

(c) defray the cost of its investigations and studies out of the ordinary revenue of the Commission;

(d) make reports and recommendations to the Government of the Province and the Municipality.

(3) Any costs incurred by the Commission under this Section are expenses of operating the Bridges or a transportation project in respect of which the Commission is collecting tolls, fees, rates and other charges.



## Planning Context

What follows is an overview of the structure and the factors which are considered in the planning process.

### *Organizational Structure*

The Board of Commissioners for Halifax Harbour Bridges (HHB) has nine members: five are appointed by the Province of Nova Scotia, including the chair and vice chair, and four are Regional Councillors, appointed by Halifax Regional Municipality. Within the board structure, standing committees provide governance and direction to auditing; maintenance; finance/administration/planning (FAP); and operations, communications and MACPASS (OCM).

There are 35 permanent staff, and HHB employs approximately 40 painters and 12 gardening staff seasonally. There are also approximately 50 dedicated members of the Commissionaires of Nova Scotia (CNS) who are under contract and have provided operational services to the bridges for 55 years.

### *Strengths*

- HHB has 55 years' experience in maintaining and operating suspension bridges.
- HHB has expertise in implementing and operating the collection of electronic tolls.

- HHB is financially self-reliant and reports to the Minister of Finance for the Province of Nova Scotia. As a self-funding, user-pay operation, HHB receives no funding from the provincial government.
- HHB is financially strong, with ratings of AA (low) with DBRS and AA- stable from Standard & Poor's.
- Through strategic capital investments and a comprehensive maintenance plan, the harbour bridges are two of the best maintained pieces of infrastructure in the province.
- MACPASS, HHB's electronic toll collection system, reduces toll-plaza congestion and idling times to benefit the environment. During the peak travel time, approximately 80 per cent of the crossings are made with MACPASS.

### *Weaknesses*

- The Macdonald Bridge has been operating for 55 years and the MacKay Bridge for 40 years. Age, maintenance costs, and the effort required to ensure that the bridges remain structurally sound will increase.
- At some point, additional funding will be required to continue to properly maintain the bridges. The last toll increase for automobiles was in 1992.
- Based on current traffic growth projections, the bridges are approaching

full capacity. According to a 2005 traffic study, there are very few improvements that can be done to help ease congestion on the two bridges.

### **Opportunities**

- HHB has identified growth opportunities to increase customer service by marketing MACPASS to other toll-collection agencies. In late 2009, HHB expanded the use of MACPASS to the parkade at the Halifax Stanfield International Airport.
- HHB will continue to take a leadership role in finding solutions to manage the demand for transportation. There are ways in which tolling can play a role, and HHB will continue to analyze the potential impact.
- Cordon tolling, a toll charged to vehicles entering congested areas during specific times of the day, has been implemented in cities of various sizes around the world. The geography of the peninsula of Halifax is well-suited for cordon tolling, and the revenue generated could be dedicated to fund transit. HHB could further develop its tolling system to administer cordon tolling.
- HHB will continue to lead the discussion about sustainable transportation in this region. It began with sharing our messages around the Cross Harbour Traffic Needs Assessment and continues with our position on the importance of

having a sustainable transportation network. We have also begun sharing our vision to provide transportation infrastructure that is environmentally and economically sustainable.

### **Threats**

- HHB is vulnerable to adverse economic developments that arise as a result of rising fuel costs or a downturn in the economy. Both can have a negative impact on traffic volumes on the bridges and affect revenue.
- Ensuring the safety of the public and public buildings/structures is of the utmost priority for HHB. In 2009, HHB initiated a three-year state-of-the-art security project.

## **Strategic Goals**

To carry out its mission, Halifax Harbour Bridges has defined the following strategic goals:

- Manage the cash flow and debt to meet the future capital and maintenance requirements of HHB.
- When requested, advocate HHB's plan to address additional cross-harbour capacity and initiate planning steps to secure the transportation corridor.
- Focus on strengthening HHB's relationship with major stakeholders, including all who use the bridges.





- When requested, support and advance any potential projects with the Halifax Regional Municipality and the Province of Nova Scotia.
- Communicate HHB's long-term strategic plan.
- Become an industry leader in safety, security, and operations.
- Continue a major six-year maintenance program started in 2006.
- Become a recognized leader in the pursuit of sustainable transportation demand management solutions.
- Increase the percentage of vehicle crossings using MACPASS to 80 per cent.

## Core Business Areas

### *Safety and Emergency Preparedness*

**Objective:** To ensure the safety and security of the traveling public and employees through ongoing reviews and implementation of HHB's policies, procedures, and initiatives.

The two harbour bridges are among the safest and best-maintained pieces of infrastructure in Nova Scotia. Safety measures include a wind-detection system, mobile speed radar, ice-detection sensors, around-the-clock bridge security and traffic enforcement, cameras, emergency telephones on the Macdonald

Bridge, and separate sidewalk and bicycle lanes on the Macdonald Bridge.

### Focus for 2010-2011

- Early in 2010, six variable-message signs (VMS) will become operational on the approach roads to the MacKay Bridge (three in Halifax and three in Dartmouth). These signs are located ahead of key decision points on the approach roads to the MacKay Bridge. The signs will provide real-time information to motorists about construction projects, extreme weather conditions, or vehicle accidents, thus allowing the driver sufficient time to choose an alternate route.
- The installation of a state-of-the-art security system, which will significantly increase the number of cameras on both bridges in addition to lights, sensors, and security fences, will start this year. This is a three-year project started in late 2008.
- Incident management and proactive traffic enforcement will continue to work with the Halifax Regional Police and the provincial motor vehicle compliance department.
- We are implementing software that will allow us to analyze why, when, and how accidents occur. This information will help improve traffic management procedures.



## ***Maintenance***

**Objective:** To ensure that the bridges are well maintained and structurally sound.

Each year, the two harbour bridges receive a rigorous inspection to ensure that all maintenance requirements are identified and proper action is taken. The annual inspection determines the course of action for the current year and forms the basis of the three-year maintenance plan.

With the extensive amount of construction work that takes place each year, HHB works hard to minimize disruption to the travelling public.

The major projects completed in 2009 included resurfacing of the Macdonald Bridge approach spans, installing barrier extensions on the Macdonald Bridge, replacing MacKay Bridge approach span stiffeners, and replacing MacKay Bridge suspended span bearings and expansion joints at cable bents. HHB also completed the three-year painting program focusing on painting the MacKay Bridge main cables and suspender ropes.

### **Focus for 2010–2011**

The focus in 2010–2011 will be to resurface the suspended spans on the MacKay Bridge, including replacement of deck and expansion joints at the main towers. On the Macdonald Bridge there will be surface treatments to the suspended spans and the Barrington Ramp wearing surfaces.

The extensive maintenance at the MacKay Bridge is part of the longer-term plan to ensure major maintenance projects are complete in preparation for replacement of the suspended spans on the Macdonald Bridge sometime between 2014 and 2016.

## ***Efficient Transportation***

**Objective:** Maintain convenient and reliable passage by working with stakeholders to identify improvements, which will assist future capacity requirements.

**Objective:** Continue to actively market electronic toll collection (MACPASS) to decrease traffic congestion and accommodate future traffic growth.

In 2009, HHB continued to market the MACPASS program and successfully launched a new program, MACPASS plus, which provides eligible customers with the option to pay for parking at the Halifax Stanfield International Airport through their existing MACPASS account. The extended utilization of the MACPASS program will continue to be a focus for HHB as we look to build on the success of the MACPASS program for other regional mobility applications.

Since March 2009, more than 21,000 MACPASS transponders have been distributed. During the peak travel times, approximately 80 per cent of the crossings are made with MACPASS.



### **Focus for 2010–2011**

For the next fiscal year, efforts will be made to gain further understanding of how to best implement future tolling efficiencies. A study will be completed that considers the feasibility of implementing peak-period tolling and/or one-way tolling. The focus of these studies is on maximizing the capacity of the two bridges and implementing sustainable initiatives to improve traffic congestion.

## **Priorities for 2010–2011**

The following priorities support HBB's core business areas for 2010–11.

### ***Safety and Emergency Preparedness***

- Complete the variable-message sign (VMS) project.
- Implement the next phase of the security system that began in 2008.

### ***Maintenance***

- Resurface the suspended spans of the MacKay Bridge, including replacement of deck and expansion joints at main towers.
- Upgrade roadside safety.
- Improve safety systems on the bridges.
- Commence design of Macdonald Bridge deck replacement.

### ***Efficient Transportation***

- Support and enhance the toll system.
- Research ways to best implement future toll efficiencies.

## **Halifax Harbour Bridges in the Community**

HBB has invested in its outreach to the communities it serves. It began with sharing our messages around the Cross Harbour Traffic Needs Assessment and continues with our position on the importance of having a sustainable transportation network for future generations. We have also begun sharing our vision for the long term. This approach will help people understand our vision: to provide transportation infrastructure that is environmentally and economically sustainable. To aid in these efforts, the Halifax-Dartmouth Bridge Commission launched a new visual identity that better reflects the organization.

### ***Vital Community Link***

Halifax Harbour Bridges is an important economic and transportation link in Atlantic Canada. The two harbour bridges provide safe and efficient travel for thousands of commuters each day and are the direct road link between the port of Halifax's two container terminals and North American markets.

### ***Sustainable Transportation***

HHB is looking to the future to ensure that the need for future cross-harbour capacity is met to ensure the economic and environmental success of the communities. In the past, HHB has addressed the problem of congestion by introducing MACPASS and building a third vehicle lane, a pedestrian lane, and a bike lane on the Macdonald Bridge. Today, HHB is investigating the impact that peak-period tolling, one-way tolling, and express lanes might have on further reducing congestion and greenhouse gases.

As part of its long term strategic planning, HHB released the Cross-Harbour Traffic Needs Assessment in March 2008, which examined the future need for additional cross-harbour capacity in the Halifax Regional Municipality (HRM). The report that Delphi MRC conducted for the commission, at HRM's request, is not a blueprint to build a third harbour crossing. It does represent sound, long-term strategic planning and offers options for the government, business community, and bridge users to consider.

The report revealed that, given current growth predictions for HRM, the region will require a third harbour crossing between 2016 and 2026. It also revealed that the best location for this crossing would be at the end of Highway 111 (the Circumferential) in Dartmouth to the south end of Halifax. HHB has referred the needs

assessment report to the Strategic Joint Regional Transportation Planning Committee, which includes representatives of the Province of Nova Scotia, HRM, and transportation users.

### ***The Environment***

HHB is doing its part to reduce greenhouse gas emissions and reduce its carbon footprint. HHB employees take reducing waste seriously and have a significant process in place to divert workplace waste.

In 2009, HHB developed an environmental policy and an action plan to support the policy. We seek continual improvement in our environmental performance by setting, reviewing, and updating environmental goals.

Using MACPASS allows traffic to flow more quickly through the toll plazas, reducing congestion and more effectively utilizing the capacity of the bridges. Independent analysis quantifies the annual contribution of the MACPASS tolling system as follows:

- 81,400 hours per year of peak-hour travel time savings across the bridges
- The reduction of fuel consumption by 484,000 litres
- The reduction of carbon dioxide by 1,160 tonnes during peak hours

Through its dedicated bikeway and walkway on the Macdonald Bridge, HHB encourages healthy, active lifestyles. The



daily average number of pedestrians on the Macdonald Bridge is over 500, and the daily average number of cyclists is over 350 during the cycling season. In 2010, HHB will focus on increasing these numbers.

### ***Community Involvement***

HHB is involved in numerous events and supports various organizations in the communities it serves:

- **Bridge Walk:** Held during Natal Day weekend, this annual event draws thousands of pedestrians for an afternoon of family fun.
- **Blue Nose International Marathon:** HHB is also an original sponsor of the Blue Nose International Marathon, with thousands of runners crossing the Macdonald Bridge.
- **MACPASS Mile:** HHB is a founding partner of the MACPASS Mile, a free one-mile run across the Macdonald Bridge and open to people of all ages and abilities.
- **Bras Across the Bridge:** in September 2009, 11,000 donated bras were hung across the handrails of the Macdonald Bridge in support of the Canadian Breast Cancer Foundation.

HHB is also proud to support various organizations, including the Discovery Centre and the Canadian Mental Health Association of Nova Scotia. HHB also hosts an annual Transportation Safety Day for

the public to learn more about how to drive safely and use active transportation such as walking and biking.

HHB helps local non-profit organizations promote themselves by hanging banners on the Macdonald Bridge or having access to floral beds along the approaches to the MacKay Bridge. Some of the organizations recently supported include

- Kids Help-Phone
- ALS Society of Nova Scotia
- Canadian Mental Health Association
- Heart and Stroke Foundation
- St. John's Ambulance
- Bosom Buddies
- Breakfast for Learning
- Democracy 250
- Treaty Day
- Nova Scotia Lung Association

## **Budget Context**

HHB continues to achieve financial stability and meet all of its obligations.

On December 4, 2007, the 10-year \$100 million Toll Revenue Bonds Series 1 matured, and on December 5, 2007, the 10-year \$30 million line of credit with the Province of Nova Scotia matured. These 10-year debts were replaced with a \$60 million 12-year loan with the Province of Nova Scotia

maturing December 4, 2019, and a \$60 million line of credit with the Province of Nova Scotia maturing on December 5, 2019.

In 2009, HHB maintained its rating with DBRS at AA (low) and with Standard & Poor's at AA-stable.



# Halifax-Dartmouth Bridge Commission

	Estimate 2009-10 (\$ 000)	Forecast 2009-10 (\$ 000)	Estimate 2010-11 (\$ 000)
<b>Revenue</b>			
Toll revenue	23,539	24,186	23,782
Other rate charges	144	144	144
Investment and sundry income:			
Trust fund investments	330	145	257
Other	570	550	266
Investment income	—	—	—
Contributed revenue	—	210	3,200
Contributed capital contribution	60	60	60
Token reserves taken into income	—	—	—
<b>Total revenue</b>	<b>24,643</b>	<b>25,295</b>	<b>27,709</b>
<b>Expenses</b>			
Operating	5,890	5,890	6,468
Maintenance	4,001	4,100	3,921
Amortization	4,807	6,327	7,693
Debt servicing	2,890	2,890	2,842
Loss (profit) on disposal of property, plant, and equipment	400	100	200
<b>Total expenses</b>	<b>17,988</b>	<b>19,307</b>	<b>21,124</b>
<b>Net operating income</b>	<b>6,654</b>	<b>5,988</b>	<b>6,586</b>

# Outcomes and Performance Measures

## Core Business Area 1 *Safety and emergency preparedness*

Outcome	Measure	Baseline Data	Trend	Target	Strategies to Achieve Target
Minimize the total number of motor vehicle accidents	Annual MVA Statistics	1.2 accidents per 100,000 vehicle kilometres traveled (VKT)	2005: 1.7 accidents per 100,000 VKT 2006: 1.6 accidents per 100,000 VKT 2009: 1.23 accidents per 100,000 VKT	Maintain or reduce 2009 VKT statistics	Emphasize traffic enforcement by bridge patrols and Halifax Regional Police (HRP)
Compliance with bridge weight restrictions	Reduced violations	Summary offence tickets (SOTs) written in 2009	2009: 138 SOTs written	Increased vigilance and proactive enforcement	Agreement is in place with provincial Motor Vehicle Compliance division Increase training for bridge patrol staff and establish enforcement schedules
Completion of VMS project	Increased safety and provision of real-time information to customers	Approved protocol and procedures in place for the operation of VMS signs	New project	VMS signs help motorists make informed decisions	Train CNS to operate VMS in accordance with HHB protocol and procedures
Compliance with posted speed limits	Annual average speed statistics	2009 average speeds	2008: MacKay: 79 km/h; Macdonald: 65 km/h 2009: MacKay: 71.7 km/h; Macdonald: 53.9 km/h	MacKay: no more than 75 km/h Macdonald: no more than 55 km/h	Continue with aggressive LIDAR and traffic enforcement procedures in conjunction with HRP




**Core Business Area 2 Maintenance**

Outcome	Measure	Baseline Data	Trend	Target	Strategies to Achieve Target
Mackay Bridge: repair approach spans concrete curb	Final construction inspection report	2007: 25% (Halifax approach spans north) 2008: 40% (Halifax approach spans south) Completed December 2009	n/a	2009: 100% (Dartmouth approach spans south)	Night and weekend closures
Macdonald Bridge: Barrington ramp resurfacing	Final inspection report	Deferred to spring 2010	n/a	2010: 100%	Night and weekend work Ramp must be closed
Mackay Bridge approach spans replace stiffener	Final inspection report	1987: Stiffeners replaced where original steel brittle 2007: Repaired two stiffeners with cracks at weld termination. Analysis shows fatigue critical Completion expected March 2010	n/a	2009: 100%	No access from deck No lane closures Confined space
Mackay Bridge: replace suspended spans bearings and expansion joints at cable bents	Final inspection report	1993: Expansion joints replaced Bearings are original	n/a	Completion Expected June 2010	Full closures of bridge required for replacement of bearings Expansion joints on weekends with lane restrictions
Mackay Bridge: structural concerns from load analysis	Final inspection report	2007: Health study 2008: Load analysis Strain gauge monitoring program initiated December 2009	n/a	Strain gauge monitoring results expected January 2011	May require bridge closures
Mackay Bridge: replace expansion joints and deck at main towers; resurface suspended spans	Final inspection report	Asphalt cracked in 2009, but remains bonded to waterproofing Expansion-joint bearing pads requiring routine replacement Deck perforations in sealed units Tender issued November 2009 Contract awarded January 2010	n/a	2010: 100%	Work planned to occur substantially during nights and weekends

**Core Business Area 2 Maintenance**

Outcome	Measure	Baseline Data	Trend	Target	Strategies to Achieve Target
Macdonald Bridge: suspended spans and Barrington ramp surface treatments	Final inspection report	Extend life of existing wearing surfaces Surfaces show loss of fines and polishing of protruding aggregate	n/a	2010: 100%	Complete in spring before intensive work at MacKay Bridge
Upgrade roadside safety		Staged program to address items in the 2009 Speed and Road Safety study	n/a	2010: 100% barrier and obstruction end treatments	Work on nights and weekends

**Core Business Area 3 Efficient Transportation**

Outcome	Measure	Baseline Data	Trend	Target	Strategies to Achieve Target
Increase the efficiency of traffic flow by increasing throughput and reducing congestion	Percentage of MACPASS usage	2001: 32.35%	2005: 49.28% 2006: 52.06% 2007: 55.00% 2008: 65.77% 2009: 68.72%	2010: 71%	Increase distribution Implement MACPASS marketing campaign Provide excellence in customer service